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## **Abstract**

This invention relates to improved methods for nucleic acid detection using methods such as the polymerase chain reaction (PCR). More specifically, the invention provides methods for simultaneous amplification and detection to enhance the speed and accuracy of prior methods. The methods involve the introduction of detectable DNA binding agents into the amplification reaction, which agents produce a detectable signal that is enhanced upon binding double-stranded DNA. In a preferred embodiment, the binding agent is a fluorescent dye. The methods also provide means for monitoring the increase in product DNA during an amplification reaction.